new edition of the old dictionary, but did not write those in the supplement.

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SCIENTIFIC BOOKS

Dioptrographic Tracings in Four Normæ of Fifty-two Tasmanian Crania. Transactions of the Royal Society, Victoria. Vol. V. (Part I.) 1909. By RICHARD J. A. BERRY and A. W. D. ROBERTSON. Pp. 1–11 notes, 211 plates.

The volume at hand is an exceptional publication, but perhaps justified under the circumstances. It consists of a large series of plates with well executed dioptrographic drawings of 52 Tasmanian crania, without measurements and with none or but the scantiest descriptive notes. Forty-one of these crania are new to science, having been discovered in private collections or excavated by the authors. As the total number of Tasmanian crania known before amounted to only 79, the new material can well be regarded as a precious addition. But the very value of it augments the wish for a thorough report. The plates will be useful and both the authors, as well as the Royal Society of Victoria, have earned the thanks of anthropologists for their publication, but they are by no means sufficient. Measurements on drawings or photographs, even though these be of "natural size," can never be taken with accuracy and be used with the confidence of those secured by accurate instruments and according to the standard methods on the specimen itself. Besides that, numerous measurements of importance, such as the surface arcs and the circumference, can not be even approximated on illustrations.

But it is specially the lack of descriptive notes which will be felt. The illustrations of Skull No. 9 may be cited as an example. In 9B, frontal view, and 9D, back view, there is visible a depression over the upper portion of the parietals. Such a feature may be due to the pronounced elevation of the sagittal region, but it may also be due to senile changes. In the absence of description one is left in uncertainty. The sutures on the specimen are represented as if free from obliteration, but they are thus shown on practically every skull in the series, and yet some of the jaws indicate an age where more or less obliteration could be expected. The illustrations of the teeth, as general in drawings of this nature, are entirely unsuitable for study. The position of the dacryons does not seem in all the cases to be accurate—for instance in plates 12B, 15B, 21B and 23B. In a number of the cases, such as 36C, one would like to know more than the pictures show as to the characteristics of the supraorbital ridges or arch. The inion point is difficult to determine with accuracy, it differs in position, and it does not generally represent the posterior terminus of the maximum glabello-occipital diameter, hence the prominent part given to it is scarcely deserved; etc.

It is to be hoped that the authors will furnish in time a good descriptive account of the valuable specimens in their hands and in their reach.

ALEŠ HRDLIČKA

The Plant Life of Maryland. By FORREST SHREVE, M. A. CHRYSLER, FREDERICK H. BLODGETT and F. M. BESLEY. Maryland Weather Service, Volume III. Pp. 533, pls. 39. Baltimore, 1910.

This report on the plant life of Maryland is a valuable contribution to plant geography and ecology. The introduction by Shreve describes the general geography of the state together with a discussion of its climate and physiography, while he gives a statement of the purposes of the work from the botanic standpoint. Dr. Shreve in Part II. gives in detail the general results of the survey of the state, as to its floristic plant geography, while in Part III., the ecologic plant geography is discussed from the regional aspect. The vegetation of the coastal zone, eastern shore district, is given by Shreve, that of the western shore district by Chrysler, while Blodgett has written the section on the upper midland district of the state, followed by a description of the mountain zone by Dr. Shreve. Not the least valuable

part of this volume, which ought to find its way into the hands of all working ecologists, are the chapters devoted to the relation of natural vegetation to crop possibilities, the agricultural features of Maryland and the forests and their products. All through the volume the several authors discuss the influence of climate and soil conditions on the distribution of the native plants. This study is made all the more valuable, because it is based on a careful geologic survey made by the state survey, and on the splendid soil maps and detailed soil study of several portions of the state by the agents of the U. S. Bureau of Soils. The illustrations, carefully chosen out of a large number taken to show the vegetation of the state, depict some of the more striking plant formations.

A list of the 1,400 species of plants collected during the botanic survey gives in a detailed manner the floral richness of the state.

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Special Articles

On a Modified Mendelian Ratio among Yellow Mice.[1]

This paper is based on a series of experiments made possible through a grant from the Carnegie Institution of Washington, for which grateful acknowledgment is hereby made.

In 1905 Cuénot called the attention of those interested in the experimental study of heredity to the fact that in his experiments he was unable to obtain any homozygous yellow mice. Heterozygous yellows he obtained in abundance, and found that in such animals yellow was dominant to all other color forms, including the gray color of wild house mice. This fact in itself is worthy of note, for among the rodents already experimented on, mice are the only animals in which the yellow coat dominates black or brown.

Cuénot found that in a total of 363 young obtained in yellow × yellow crosses, 263, or 72.45 per cent., were yellow, and 100, or 27.55 per cent., were of other colors. In view of the fact that the percentage of yellows that he obtained was smaller than the Mendelian expectation by 2.55 per cent., he tested individually the breeding capacity of the yellow animals that he had obtained. In no case was he able to discover an animal which in crosses with gray or black animals would give only yellow young. But if any of the yellows had been homozygous such a result would of course have been obtained, and from the application of the ordinary Mendelian principles we should expect one third of the yellows that he tested to have been of this sort.

It is then perfectly certain that in his experiments homozygous yellows were not formed. With this in mind, he sought an explanation of the percentage of yellows that he had obtained. If the homozygous yellow class had simply been wanting entirely, he should have obtained 66.66 per cent. of yellow mice, and the remaining 33.33 per cent. of other colors. Cuénot explained the observed increase above 66.66 per cent. by supposing that all of the "yellow" eggs which would naturally, as a result of random unions of gametes, be fertilized by yellow sperm, fail to be so fertilized, but that some of them subsequently are fertilized by non-yellow sperm and so produce heterozygous yellow young. The proportion of yellow young produced is, accordingly, greater than two thirds but less than three fourths.

Bateson and Punnett commenting on Cuénot's results, point out the fact that even if two gametes bearing the character "yellow" are unable to unite with each other, there should, nevertheless, be no deficiency of yellow young, that is, they should equal 75 per cent. For suppose a *yellow* egg is first approached by a *yellow* sperm. If no union of the two occurs, the egg may still remain capable of producing a yellow zygote, provided it presently meets a *non-yellow* sperm. But this should in all cases be possible, since spermatozoa are regularly present in excess, and the spermatozoa of a yellow mouse are by hypothesis half yellow and half non-yellow in character.

[1] Contributions from the Laboratory of Genetics of the Bussey Institution, No. 6.